

[Product Information]

IMX461ALR

Ver.1.0

Diagonal 55 mm (Type 3.4) CMOS Image Sensor with Square Pixel for Monochrome Cameras

Description

The IMX461ALR is a diagonal 55 mm (Type 3.4) CMOS active pixel type image sensor with a square pixel array and 102 M effective pixels. This IC incorporates maximum 36 dB PGA circuit and 16-bit A/D converter. 16-bit digital output makes it possible to readout the signals of 102 M effective pixels at high-speed of 2.7 frame/s in still picture mode.

In addition, vertical subsampling binning and horizontal pixel binning realize high-speed 12-bit digital output for shooting moving picture. This sensor is designed for use in consumer use digital still camera. When using this for another application, Sony Semiconductor Solutions Corporation does not guarantee the quality and reliability of this product. Therefore, don't use this for applications other than consumer use digital still camera.

In addition, individual specification change cannot be supported because this is a standard product. Consult your Sony Semiconductor Solutions Corporation sales representative if you have any questions.

Features

- ◆ Type 3.4 CMOS active pixel type dots
- ◆ Input clock frequency 72 MHz
- ◆ All-pixel readout mode
 - Various readout modes (*)
- ◆ Rolling shutter function moving picture mode
- ◆ H driver, V driver and serial communication circuit on chip
- ◆ +36 dB gain settable by monochrome in CDS/PGA on chip
- ◆ Built-in 11-bit/12-bit/14-bit/16-bit A/D converter
- ◆ 8 Lane SLVS-EC output
- ◆ Back-illuminated type

* Please refer to the datasheet for binning/subsampling details of readout modes.

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Device Structure

| | |
|--------------------------------------|--|
| ◆ Back-Illuminated CMOS image sensor | |
| ◆ Image size | Diagonal 55 mm (Type 3.4) |
| ◆ Total number of pixels | 11760 (H) × 8896 (V) approx. 104 M pixels |
| ◆ Number of effective pixels | 11664 (H) × 8750 (V) approx. 102 M pixels |
| ◆ Number of active pixels | 11656 (H) × 8742 (V) approx. 101 M pixels |
| ◆ Chip size | 48.64 mm (H) × 40.38 mm (V) |
| ◆ Unit cell size | 3.76 μm (H) × 3.76 μm (V) |
| ◆ Optical black | Horizontal (H) direction: Left 44 pixels, right 44 pixels Vertical (V) direction: Top 38 pixels, bottom 38 pixels |
| ◆ Package | 544 pin LGA |

Image Sensor Characteristics

(T_j = 60 °C)

| Item | | Value | Remarks |
|-------------------|------|-----------|--------------------|
| Sensitivity (F8) | Typ. | 5060 LSB | 1/30 s integration |
| Saturation signal | Min. | 14168 LSB | Left for 0.4 s |

Basic Drive Mode

| Drive mode | Number of active pixels | Max frame rate [frame/s] | Word length [bit] |
|-----------------|---|--------------------------|-------------------|
| Readout mode 0 | 11656 (H) × 8742 (V) approx. 102 M pixels | 10.1 | 12 |
| Readout mode 1 | 11656 (H) × 8742 (V) approx. 102 M pixels | 5.0 | 12 |
| Readout mode 3 | 11656 (H) × 8742 (V) approx. 102 M pixels | 5.0 | 12 |
| Readout mode 4 | 5828 (H) × 4370 (V) approx. 25 M pixels | 8.7 | 12 |
| Readout mode 5 | 3884 (H) × 2912 (V) approx. 11 M pixels | 30.5 | 12 |
| Readout mode 7 | 3884 (H) × 2912 (V) approx. 11 M pixels | 15.2 | 12 |
| Readout mode 8 | 3884 (H) × 1747 (V) approx. 7 M pixels | 50.6 | 12 |
| Readout mode 10 | 3884 (H) × 1747 (V) approx. 7 M pixels | 25.2 | 12 |
| Readout mode 11 | 3884 (H) × 1247 (V) approx. 5 M pixels | 70.7 | 12 |
| Readout mode 12 | 3884 (H) × 970 (V) approx. 4 M pixels | 90.5 | 12 |
| Readout mode 13 | 3884 (H) × 580 (V) approx. 2 M pixels | 148.3 | 12 |
| Readout mode 14 | 3884 (H) × 414 (V) approx. 2 M pixels | 205.0 | 12 |
| Readout mode 15 | 3884 (H) × 86 (V) approx. 0.3 M pixels | 884.5 | 12 |
| Readout mode 16 | 3884 (H) × 6 (V) approx. 0.02 M pixels | 4101.1 | 12 |
| Readout mode 17 | 11656 (H) × 1747 (V) approx. 20 M pixels | 50.6 | 12 |
| Readout mode 18 | 11656 (H) × 1247 (V) approx. 15 M pixels | 70.7 | 12 |
| Readout mode 19 | 11656 (H) × 970 (V) approx. 11 M pixels | 90.5 | 12 |

[Product Information]

Ver.1.0

IMX461AQR

Diagonal 55 mm (Type 3.4) CMOS Image Sensor with Square Pixel for Color Cameras

Description

The IMX461AQR is a diagonal 55 mm (Type 3.4) CMOS active pixel type image sensor with a square pixel array and 102 M effective pixels. This IC incorporates maximum 36 dB PGA circuit and 16-bit A/D converter. 16-bit digital output makes it possible to readout the signals of 102 M effective pixels at high-speed of 2.7 frame/s in still picture mode.

In addition, vertical subsampling binning and horizontal pixel binning realize high-speed 12-bit digital output for shooting moving picture. This sensor is designed for use in consumer use digital still camera. When using this for another application, Sony Semiconductor Solutions Corporation does not guarantee the quality and reliability of this product. Therefore, don't use this for applications other than consumer use digital still camera.

In addition, individual specification change cannot be supported because this is a standard product. Consult your Sony Semiconductor Solutions Corporation sales representative if you have any questions.

Features

- ◆ Type 3.4 CMOS active pixel type dots
- ◆ Input clock frequency 72 MHz
- ◆ All-pixel readout mode
Various readout modes (*)
- ◆ Rolling shutter function moving picture mode
- ◆ H driver, V driver and serial communication circuit on chip
- ◆ +36 dB gain settable by Bayer color in CDS/PGA on chip
- ◆ Built-in 11-bit/12-bit/14-bit/16-bit A/D converter
- ◆ 8 Lane SLVS-EC output
- ◆ R, G, B primary color mosaic filters on chip
- ◆ Back-illuminated type

* Please refer to the datasheet for binning/subsampling details of readout modes.

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Device Structure

- ◆ Back-Illuminated CMOS image sensor
- ◆ Image size Diagonal 55 mm (Type 3.4)
- ◆ Total number of pixels 11760 (H) × 8896 (V) approx. 104 M pixels
- ◆ Number of effective pixels 11664 (H) × 8750 (V) approx. 102 M pixels
- ◆ Number of active pixels 11656 (H) × 8742 (V) approx. 101 M pixels
- ◆ Chip size 48.64 mm (H) × 40.38 mm (V)
- ◆ Unit cell size 3.76 μm (H) × 3.76 μm (V)
- ◆ Optical black Horizontal (H) direction: Left 44 pixels, right 44 pixels
Vertical (V) direction: Top 38 pixels, bottom 38 pixels
- ◆ Package 544 pin LGA

Image Sensor Characteristics

(Tj = 60 °C)

| Item | | Value | Remarks |
|--------------------|------|-----------|--------------------|
| Sensitivity (F5.6) | Typ. | 5630 LSB | 1/30 s integration |
| Saturation signal | Min. | 14168 LSB | Left for 0.4 s |

Basic Drive Mode

| Drive mode | Number of active pixels | Max frame rate [frame/s] | Word length [bit] |
|-----------------|---|--------------------------|-------------------|
| Readout mode 0 | 11656 (H) × 8742 (V) approx. 102 M pixels | 10.1 | 12 |
| Readout mode 1 | 11656 (H) × 8742 (V) approx. 102 M pixels | 5.0 | 12 |
| Readout mode 3 | 11656 (H) × 8742 (V) approx. 102 M pixels | 5.0 | 12 |
| Readout mode 4 | 5828 (H) × 4370 (V) approx. 25 M pixels | 8.7 | 12 |
| Readout mode 5 | 3884 (H) × 2912 (V) approx. 11 M pixels | 30.5 | 12 |
| Readout mode 7 | 3884 (H) × 2912 (V) approx. 11 M pixels | 15.2 | 12 |
| Readout mode 8 | 3884 (H) × 1747 (V) approx. 7 M pixels | 50.6 | 12 |
| Readout mode 10 | 3884 (H) × 1747 (V) approx. 7 M pixels | 25.2 | 12 |
| Readout mode 11 | 3884 (H) × 1247 (V) approx. 5 M pixels | 70.7 | 12 |
| Readout mode 12 | 3884 (H) × 970 (V) approx. 4 M pixels | 90.5 | 12 |
| Readout mode 13 | 3884 (H) × 580 (V) approx. 2 M pixels | 148.3 | 12 |
| Readout mode 14 | 3884 (H) × 414 (V) approx. 2 M pixels | 205.0 | 12 |
| Readout mode 15 | 3884 (H) × 86 (V) approx. 0.3 M pixels | 884.5 | 12 |
| Readout mode 16 | 3884 (H) × 6 (V) approx. 0.02 M pixels | 4101.1 | 12 |
| Readout mode 17 | 11656 (H) × 1747 (V) approx. 20 M pixels | 50.6 | 12 |
| Readout mode 18 | 11656 (H) × 1247 (V) approx. 15 M pixels | 70.7 | 12 |
| Readout mode 19 | 11656 (H) × 970 (V) approx. 11 M pixels | 90.5 | 12 |